

DOCKET NO. 2003.08.010.WT0  
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PATENT

REMARKS

Claims 1-20 were originally filed in the present application.

Claims 1-20 were rejected in the November 21, 2007 Office Action.

Claims 1 and 11 are amended herein.

Claims 1-20 remain pending in the present application.

Reconsideration of the claims is respectfully requested.

Applicant has amended Claims 1 and 11 herein. These amendments are fully supported by the specification and do not add new matter. Accordingly, Applicant respectfully requests that the Examiner enter the amendments.

The Examiner rejected Claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,292,838 to *Nelson* ("*Nelson*") and further in view of U.S. Patent Application Publication No. 2002/0039357 to *Lipasti et al.* ("*Lipasti*"). Of these, Claims 1 and 11 are independent. These rejections are respectfully traversed for the reasons discussed below.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP* § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992).) The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984).) Only when a *prima facie* case of obviousness is established does the burden shift to the Applicant to produce evidence of non-obviousness.

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(MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993).) If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the Applicant is entitled to grant of a patent. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985).)

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must not be based on the Applicant's disclosure. (MPEP § 2142).

In order to establish obviousness by combining references there must be some teaching or suggestion in the prior art to combine the references. (*Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 U.S.P.Q.2d 1294, 1297 (Fed. Cir. 1997) ("It is insufficient to establish obviousness that the separate elements of an invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the references."); *In re Rouffet*, 149 F.3d 1350, 1355-56, 47 U.S.P.Q.2d 1453, 1456 (Fed. Cir. 1998) ("When a rejection depends on a combination of prior art references, there must be some teaching, or motivation to combine the references.").)

Evidence of a motivation to combine prior art references must be clear and particular if the trap of "hindsight" is to be avoided. (*In re Dembiczak*, 175 F.3d 994, 50 U.S.P.Q.2d 1614

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(Fed. Cir. 1999) (Evidence of a suggestion, teaching or motivation to combine prior art references must be "clear and particular." "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'"); *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998) ("[R]ejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be 'an illogical and inappropriate process by which to determine patentability.'")

The Applicant respectfully submits that neither *Nelson* nor *Lipasti*, either alone or in combination, discloses, teaches or suggests a first MANET node comprising "a radio frequency (RF) transceiver capable of wirelessly communicating with other ones of said plurality of MANET nodes; and a controller capable of receiving incoming data packets from said RF transceiver and sending outgoing data packets to said RF transceiver, wherein said controller is further capable of implementing a MANET routing protocol at a medium access control (MAC) layer by, at the MAC layer, (i) intercepting a first data packet associated with at least one of the incoming data packet and the outgoing data packet, (ii) determining a first MAC layer address associated with said first data packet, and (iii) adding said first MAC layer address to said first data packet," as recited by independent Claim 1, as amended.

Applicant has amended independent Claim 1 to make clear that the controller is capable of implementing a MANET routing protocol at the MAC layer. Existing MANET routing protocols, on the other hand, are implemented in MANET nodes as a User Datagram Protocol (UDP) application

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in which route information is propagated to the TCP/IP stack of each host by modifying the interface to the kernel routing table. Propagating route information to the TCP/IP stack in this manner requires modifications to the host TCP/IP stack. In most cases, however, the source code for the host TCP/IP stack is not available. Existing protocols also require the network interface of the MANET node to be assigned an IP address before the MANET node can become operational and learn about neighboring MANET nodes. Furthermore, because it is necessary to modify the kernel routing table, conventional MANET routing protocols are implemented on open-source Linux-based platforms and not on Windows-based platforms. See Present Application, para. 14.

Thus, by intercepting an incoming or outgoing data packet at the MAC layer, determining a MAC layer address associated with the data packet at the MAC layer, and adding the determined MAC layer address to the data packet at the MAC layer, as claimed by amended Claim 1, the present invention is able to implement a MANET routing protocol at the MAC layer. As a result, the MANET routing algorithm may be inserted transparently below the TCP/IP stack and no changes to the host TCP/IP stack are required. In addition, the claimed protocol may be ported to any platform (such as Windows) without requiring any modifications to the OS Kernel. Furthermore, the claimed protocol allows neighboring MANET nodes and topology to be discovered without using invasive means and without requiring an IP address to be assigned to the network interface. See Present Application, para. 50.

Therefore, because existing routing protocols for MANETs are not implemented at the MAC layer as is the claimed invention, Applicant submits that the claimed invention being directed toward a MANET environment is highly relevant and should not be disregarded. Because of this, Applicant

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also respectfully submits that a non-MANET environment such as described in *Nelson* is not relevant to the claimed MANET routing protocol.

In addition, *Nelson* is directed toward a system for determining a MAC layer address for a target device's network interface based on an IP address for an internetworking device (such as a router) attached to the same remote subnet as the target device. See, e.g., Abstract. Thus, instead of teaching a routing protocol, *Nelson* teaches the identification of a MAC layer address for a specific target device. *Nelson* teaches that this may be needed when a packet is forwarded by a router from one subnet to another subnet and the router overwrites the original MAC address with a MAC address for the router's egress interface. Thus, upon reaching its destination, the packet may no longer have the MAC address for the interface of the target device. *Nelson*, col. 2, lines 3-24. To recover this information, the IP address for an internetworking device attached to the same subnet as the target device may be identified using *Nelson*'s teachings, and the lost MAC address may be identified based on that IP address. Col. 9, line 35 – col. 11, line 38.

The Examiner cites a portion of *Nelson* that describes Address Resolution Protocol (ARP) to show the claimed controller. Office Action, page 8. However, ARP is simply "a known protocol for mapping IP addresses to MAC addresses." *Nelson*, col. 9, lines 60-61. Thus, the cited portion of *Nelson* partially describes routing using ARP as follows: "[T]he router searches the ARP cache to find a MAC address that matches the IP address. If the router finds a corresponding MAC address, then the packet can be converted to include the new MAC address." Col. 10, lines 9-12.

In contrast, independent Claim 1, as amended, recites a controller "capable of implementing a MANET routing protocol at a medium access control (MAC) layer by, at the MAC layer, (i)

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intercepting a first data packet associated with at least one of the incoming data packet and the outgoing data packet, (ii) determining a first MAC layer address associated with said first data packet, and (iii) adding said first MAC layer address to said first data packet.” Therefore, the claimed MANET routing protocol is implemented at the MAC layer, where a packet is intercepted before being sent to the IP layer. As previously described, this is not disclosed, taught or suggested by *Nelson. Lipasti*, which was cited by the Examiner merely to show a MANET, fails to provide these missing elements. Therefore, for at least these reasons, a *prima facie* case of obviousness against independent Claim 1, as amended, has not been presented with reference to the cited art, either alone or in combination. Therefore, the Applicant respectfully submits that this rejection should now be withdrawn.

Similar to independent Claim 1, independent Claim 11 recites “at a medium access control (MAC) layer, intercepting a first data packet associated with at least one of an incoming data packet and an outgoing data packet; at the MAC layer, determining a first MAC layer address associated with the first data packet; and at the MAC layer, adding the first MAC layer address to the first data packet.” Accordingly, for the reasons discussed above in connection with Claim 1, independent Claim 11 is not made obvious by the cited art. Therefore, the Applicant respectfully submits that this rejection should now be withdrawn.

Dependent Claims 2-10, which depend from independent Claim 1, and dependent Claims 12-20, which depend from independent Claim 11, are also not made obvious by the cited art because they include the limitations of their respective base claims and add additional elements that further

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distinguish the art. Therefore, the Applicant respectfully submits that these rejections should now be withdrawn.

The Applicants disagree with the Examiner's rejections of Claims 1-20 based on misdescriptions and/or misapplications of *Nelson* and *Lipasti* to at least some of Claims 1-20. However, the Applicant's arguments regarding those other shortcomings of *Nelson* and *Lipasti* are moot in view of the Claim 1 arguments above. However, the Applicant reserves the right to dispute in future Office Action responses the appropriateness and the applications of *Nelson* and *Lipasti* to the claims of the present application, including the right to dispute assertions made by the Examiner in the November 21, 2007 Office Action.

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SUMMARY

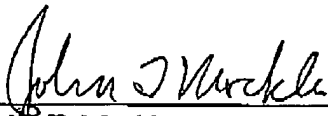
For the reasons given above, the Applicants respectfully request reconsideration and allowance of the pending claims and that this application be passed to issue. If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *jmockler@munckbutrus.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

MUNCK BUTRUS CARTER, P.C.

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